Army SSP Format

Title Page

Approval and Coordination Summary

I. Purpose

II. Executive Summary

III. System Description and Authoritative Representations

IV. Program History (for ICT) or Program Acquisition Summary (for PM)

V. Simulation Support Approach, Strategy & Rationale

1. M&S Strategy
2. ORD or Program Issues Mapping/Crosswalk with M&S
3. Specific M&S Focus Areas
4. Data Support
5. Management
6. Resources and Facilities
7. Verification, Validation and Accreditation (VV&A)

Appendices:
1.Acronyms
2.References
3.Definitions
4.Descriptions of Models, Simulations & Other Simulation Support Tools
The selected M&S must include:
- Model name(s)
- Model description(s)
- Model proponent/owner
- Model characteristic(s) (i.e., live, virtual, constructive, etc.)
- Model applications to this SSP
- Level of fidelity (as appropriate)
- High Level Architecture (HLA) compliance
- VV&A status and prior activities
- Related M&S activities
- Data Support (requirements, sources and certification)

5.Distribution

Title Page

The title page shall include the name of the program, ACAT level, milestone status, name of the organization, address, date and distribution statement.

Approval and Coordination Summary

The approval and coordination page must include “prepared by” POC, contact information and appropriate Approval Authority signature. This page must also include a coordination summary including the names of organizations with which the SSP has been coordinated. A list of core coordinating organizations is provided in Section 3. Signature block and date block should be included for each organization.

An example format is as follows:

_____ _____

Name of individual Date
Name of organization
Address of organization

I. Purpose

The Purpose is intended to provide a concise statement of the purpose of the plan, specifically as to its scope (combat development or materiel development issues to be discussed) and objectives.

Recommended length: One paragraph.

II. Executive Summary

The executive summary is intended to provide a synopsis of Section V of the plan.

Recommended length: No more than 2 pages

III. System Description and Authoritative Representations

The system description provides a concise, top-level description of the materiel system either being recommended or actually being developed as a program. The program’s milestone status, acquisition phase and ACAT level are included here. This section adequately describes required capabilities and information about the system in a standard way that supports export into M&S. The system description discusses and defines authoritative representations..

IV. Program History (for ICT) or Program Acquisition Summary (for PM)

This section provides a description of the program history or materiel system acquisition strategy. A timeline schedule showing current phase and next milestone decision and special events are included. Where applicable, draw a link between related development systems or current systems in the Army inventory (systems in the same PEO or systems that will operationally link through a common deployment).

V. Simulation Support Approach, Strategy & Rationale

1. M&S strategy

The M&S Strategy section is the heart of the SSP. The SSP proponent describes how modeling and simulation are and will be used in support of the current acquisition phase and future phases of the program. An M&S schedule is included showing its relationship to the Acquisition Program schedule. A history of the use of M&S in past phases of the program is included in this subsection.

2. ORD or Program Issue Crosswalk and Mapping to M&S

An ORD crosswalk with M&S applications is the foundation of a good SSP. The examples in Table 1 are provided for illustrative purposes. Such a crosswalk should track the requirements at a level of detail sufficient to indicate that there is a workable plan, with known M&S (or with M&S that must be developed) that can be applied to address key program requirements and issues. Appendix 4 to the SSP provides the details on the listed M&S, showing origin, VV&A status, availability, prior applications, and points of contact.

Table 1: Sample ORD-SSP Crosswalk

Statement of Requirement or Program Issue	Reference (ORD/MNS)	Model & Simulation to be Applied
Lethality Requirement: System XYZ will provide a level of anti-personnel effectiveness expressed as the expected fraction of casualties achieved against personnel deployed in a specific area, e.g. 100m x 100m, prone posture.	ORD Para.2.1.1.2	CASRED (or ICEM) (Casualty Reduction Model) or (Integrated Casualty Estimation Model)
System XYZ will provide an Operational Availability (Ao) of 90%, when operating in hot, dry climatic conditions, in accord with the mission profile and operational mode summary.	ORD Para. 3.4.5 And OMS/MP	OSRAP/SESAME (Optimum Stock Requirements Analysis Program) or (Selected Essential Item Stock for Availability Method)
System XYZ will exhibit a 99% probability of achieving and maintaining a command and control link between the Tactical Operations Center and Firing Battery under combat conditions.	ORD Para. 7.8.9	CES or TIM (Communications Effects Server) or (Tactical Internet Model)
Warhead target detection sensor will demonstrate a probability of correct target detection of 95%, under ambient conditions, on a clear day.	ORD Para. 9.8.7.	Aimpoint/WAMPk
The system will demonstrate at least a 20% increase in combat effectiveness as compared with the system which it is replacing.	ORD Para. 4.4.5	CASTFOREM (Combined Arms and Support Task Force Evaluation Model)

The combat developer must identify how M&S will be applied in answering questions about and supporting development of proposed requirements. The materiel developer must identify how M&S answers questions about and supports solutions to approved program requirements. The M&S Strategy describes how selected M&S will be applied and the rationale for their use. The name, description, characteristics, and applications for each selected M&S should be provided. A number of programs have effectively used referenced tables with this information in their SSPs.

3. Specific M&S Focus Areas

Focus areas are common issues pertaining to M&S application. Many of the areas are addressed in early versions of the SSP. Others are addressed when more information is available. The specific focus areas addressed are tailored to individual programs. There are no "right" answers when it comes to simulation support planning, but based on the Army's experience in developing SSPs, some of the appropriate questions to ask in common M&S focus areas are shown in Table 2.

Table 2: M&S Focus Areas (as applicable)

Category	Discussion/Checklist
a. Combat Developments	❑ What M&S is being performed by battle labs? ❑ What live, virtual and constructive simulations are being used to support combat development? ❑ How can design and engineering M&S efforts for a current and future program provide authoritative representations of a system for combat development M&S efforts?
b. Analysis/AoA	❑ What were the assumptions for representations used in the AoA? ❑ What Army M&S analytical tools were used in support of the analysis? ❑ Who has the data and results for these efforts? ❑ What representations of the system are required for future analysis or combat development purposes? Are these requirements in the system ORD?
c. Threat	❑ Has the SSP been crosswalked with the System Threat Assessment Report (STAR)? ❑ How are threat systems represented? ❑ What are the assumptions for future threat representations? ❑ Were threat representations appropriately verified and validated by the appropriate Army and DoD agencies?
d. Advanced Collaborative Environment/IDE	The Advanced Collaborative Environment (ACE) is a basic tenet of SMART. The ACE allows M&S users to exchange and use information pertaining to concept or system development through an Integrated Data Environment supported by effective processes and management to ensure collaboration between the many stakeholders. ❑ How will the different M&S efforts be integrated to support the ACE? ❑ Does the ACE utilize suitable collaborative technologies such as "Windchill?" ❑ Which M&S tools are integrated in the ACE? ❑ What management processes exist to facilitate trade-off analysis and stakeholder feedback?
e. Design and Engineering	The program should take full advantage of M&S technologies to assist in the design and engineering of the system. ❑ What CAD/CAM tools are being employed and how are the virtual designs linked to M&S tools addressing system effectiveness, cost estimates, supportability requirements and operational effectiveness? ❑ How are CAD/CAM tools integrated with other M&S tools to

Category	Discussion/Checklist
	allow trade-off analysis? ❑ How are digital representations of the CAD/CAM system designs used to provide system representations for use in Army M&S such as OneSAF, COMBAT XXI, WARSIM, etc?
f. Manufacturability	The program should take full advantage of M&S technologies to assist in the manufacturing of the system. ❑ Are there design changes that would improve the manufacturing process? ❑ Is the production line designed with M&S so as to optimize the manufacturing process? ❑ Is the developer required to model manufacturability? ❑ Which manufacturing decisions do M&S support?
g. Reliability, Availability and Maintainability	Reliability is the probability that a device or system will perform its prescribed duty without failure for a given time when operated correctly in a specified environment. Availability is an index of effectiveness that allows answering: Is equipment available in working condition when needed? Maintainability is defined as an inherent characteristic of a finished design that determines the type and amount of maintenance required to retain that design in, or restore it to, a specified condition. ❑ Is the use of M&S to assess/enhance system reliability, availability and maintainability addressed? ❑ How is M&S used to identify methods to minimize maintenance efforts? ❑ Are decisions that are supported by M&S identified?
h. Lifecycle Cost/Operation & Support	The objective is to create a cost culture by participation in a collaborative environment of cost, acquisition, requirements, and training. Cost tools must interface with engineering & requirements tools to implement Cost As An Independent Variable (CAIV) concept. ❑ What M&S cost tools are being used to estimate the lifecycle cost of a system? ❑ Automated Cost Estimating Integrated Tool (ACEIT) is the standard Army cost model. Is it being used? ❑ Are the cost M&S tools linked with engineering design tools? ❑ What design trade-off analysis M&S tools are being used? ❑ What software cost estimating M&S tools are being used? ❑ What M&S tools are being used for Operation & Support cost estimating?
i. Survivability & Lethality	Survivability is defined as the capability of a system to avoid or withstand man-made hostile environments without suffering an abortive impairment of its ability to accomplish its designated mission. Lethality is defined as the ability of a weapon system to inflict damage that will cause the loss or degradation in the ability of a target system to complete its designated mission(s). ❑ How is M&S used to address issues related to system survivability in each functional area and acquisition phase? ❑ How is M&S used to enhance survivability of the weapon system in each functional area and acquisition phase? ❑ How is M&S used to enhance the lethality of the weapon system or its ability to perform efficiently its mission? ❑ Which lethality models are used?
j. Interoperability	Selected M&S should be interoperable not only with other programs' M&S but also with appropriate C4ISR systems of systems. This

Category	Discussion/Checklist
	maximizes re-usability and reduces costs due to economies of scale and the ability to re-use M&S developed and funded by other programs. ❑ How is M&S used to achieve interoperability with other systems of systems?
k. Test and Evaluation	"Test and Evaluation" provides the approach for use of M&S in the key areas of system test and evaluation. ❑ Has a "model-test-model" process been set up or defined? ❑ Has the SSP been crosswalked with the TEMP? ❑ How does M&S assist in carrying out the system's test and evaluation program in each functional area and phase? ❑ Is M&S used to facilitate developmental testing? ❑ Is M&S used to facilitate operational testing? ❑ How is M&S used to facilitate live fire test and evaluation? ❑ Is the use of M&S in test and evaluation cost and time effective? ❑ If appropriate, is the Software Test and Evaluation Panel process used in developing the strategy for test and evaluation?
l. Training (embedded, stand-alone, and system of systems trainers)	Trainability is the ability to improve the level of learning and performance transfer required to perform the responsibilities assigned to the function, and accomplish the mission assigned to the system. ❑ Has the SSP been crosswalked with the STRAP? ❑ Are training capabilities embedded in the system? ❑ Are simulations and simulators incorporated for individual, unit, collective, battle staff, Joint, Interagency, and Multinational (JIM), and Special Operations Forces (SOF) training? ❑ Can system capabilities be incorporated into constructive M&S for training? ❑ Can live, virtual, and constructive M&S be integrated and networked for training? ❑ Are synthetic environments used to support training? ❑ What efficiencies can M&S give in the training functional area? ❑ Are training devices re-usable in other functional areas or non-system-specific training devices? ❑ The use of M&S for training through system lifecycle should be addressed. What M&S tools are being used for training?

4. Data Support

Data Support" identifies what M&S-related data will be required to meet program objectives.

- ❑ What are the sources of the data, algorithms, and object representations? Are they credible? Are they authoritative? Are they validated? Are they certified?
- ❑ Is data re-use appropriate?
- ❑ How will data be used?
- ❑ Do the data meet DoD and Army standards?
- ❑ Are the environmental data in the format needed for the selected simulation?
- ❑ Who will use the data generated by M&S tools?

5. Reusability and Interoperability

Reuse involves the use of the same and/or modified M&S (or components thereof) throughout a system's lifecycle and in other programs. It is a key component of the SMART initiative.

- Was a search conducted to identify existing M&S resources?
- Was an authoritative representation set up?
- Does the SSP address reusability of M&S to maximize use throughout the entire program and by other organizations?
- If the M&S is owned, provided or deliverable by contractor, how will it interoperate with government M&S?
- If this is a new development effort, is the M&S designed to be HLA compliant?
- How can the M&S serve other uses?
- Is interoperability of M&S achieved within the system, Service, and other DoD components?
- If this is a new development effort, is the M&S designed to be HLA compliant?
- Are M&S compatible with other existing M&S? with C4ISR systems of systems?

6. Management

This section provides information and wiring diagram(s) to identify key personnel by areas of responsibility and circumstances that may impact the management of the program's M&S activities.

- Are key personnel identified?
- Are M&S areas in which contractors will work identified?
- Is an Integrated Concept Team (ICT) or Integrated Product Team (IPT) with representation from each functional area identified?
- Are circumstances that may impact M&S management included?

7. Resources and Facilities

"Resources" identifies M&S-related resource requirements and responsibilities to include funding required for development and management of M&S, facilities, equipment, and services and schedule.

- What models are used to estimate lifecycle costs? to track costs?
- What analysis models are used to identify cost effective alternatives for requirements?
- Are cost estimates validated by an independent agency?
- What models are used to estimate schedule? to manage each M&S application?
- Are M&S resources, such as equipment, services, facilities, etc., identified?
- Which engineering economics tools are used to manage M&S software developments?

8. Verification, Validation and Accreditation (VV&A)

Identifies how VV&A will be conducted for each selected M&S. VV&A will comply with DA PAM 5-11 provisions.

- ❑ Has a VV&A plan been prepared?
- ❑ Have technical experts reviewed and approved the plan?
- ❑ Does the plan identify all stakeholders, and has it been staffed through them?

Appendices:

1. Acronyms
2. References
3. Definitions
4. Descriptions of Models, Simulation & Other Simulation Support Tools

   The selected M&S must include:

   - Model name(s)
   - Model description(s)
   - Model proponent/owner
   - Model characteristic(s) (i.e., live, virtual, constructive, etc.)
   - Model applications to this SSP
   - Level of fidelity (as appropriate)
   - High Level Architecture (HLA) compliance
   - VV&A status and prior activities
   - Related M&S activities
   - Data Support (requirements, sources and certification)
5. Distribution